

What is claimed is:

1. A sensor rail device for seat position detection, comprising:

(a) an elongated upper rail body to partially and fixedly support a seat thereon;

(b) an elongated stationary lower rail body which slidably engages and supports said upper rail body such that said upper rail body can axially slide on said lower rail body;

(c) a position sensor device fixedly mounted on said upper rail body; and

(d) a contact plate member having a predetermined length, which is secured to said lower rail body at a location to be contacted by said position sensor device as the position sensor device moves along said lower rail body,

said position sensor device comprising:

(i) a pivotal contact lever device having a magnet member which generates a magnetic field, said contact lever device contacting said contact plate member within a predetermined range along said lower rail body, angularly displacing said magnetic field; and

(ii) a stationary magnetic field sensor device which detects angular displacement of said magnetic field, outputting seat positional data to be electronically processed into seat positional signals.

2. A sensor rail device for seat position detection, comprising:

(a) an elongated upper rail body to partially and fixedly support a seat thereon;

(b) an elongated stationary lower rail body which slidably engages and supports said upper rail body such that said upper rail body can axially slide on said lower rail body;

(c) a position sensor device fixedly mounted on said lower rail body; and

(d) a contact plate member having a predetermined length, which is secured to said upper rail body at a location to be contacted by said position sensor device as the contact plate member moves along said lower rail body,

said position sensor device comprising:

(i) a pivotal contact lever device having a magnet member which generates a magnetic field, said contact lever device contacting said contact plate member within a predetermined range along said upper rail body, angularly displacing said magnetic field; and

(ii) a stationary magnetic field sensor device which detects angular displacement of said magnetic field, outputting seat positional data to be electronically processed into seat positional signals.

3. A sensor rail device according to claim 1 or 2, wherein said contact lever device is biased by biasing means toward an angular position.

4. A sensor rail device according to claim 1 or 2, wherein said position sensor device is at least partially housed in a bracket member.

5. A sensor rail device according to claim 1 or 2, wherein said contact plate member comprises a plurality of pins.

6. A sensor rail device according to claim 1 or 2, wherein said contact plate member is provided in a double-step configuration.

7. A sensor rail device according to claim 1 or 2, wherein said contact plate member is slanted.

8. A seat rail system comprising a sensor rail device according to any of claims 1 to 7 and a seat rail member which is provided in parallel with said sensor rail device, said sensor rail device and said seat rail member fixedly supporting said seat together.